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ABSTRACT of the DISCLOSURE:

A control methodology for regulating the power input and output of a inertial energy storage device, such as a flywheel. The control methodology utilizes a continuously variable transmission [CVT] and comprises control of the CVT speed ratio based on feedback of the CVT output torque.

Two embodiments are detailed. For both embodiments the CVT ratio is a function of an error signal equal to the difference between operator input and CVT output torque. Operator input may be a positive or a negative value, a negative value corresponding to regenerative power. Operator input is force or torque analogous to throttle opening or braking effort.

This methodology continuously synchronizes the speeds of the inertial energy storage device and powered machinery, keeping frictional losses to a minimum.